

Two-chamber Rocket Box

Materials (makes one house)

2" diameter (2 3/8" outside diameter) steel pole, 20' long
 Two 1" x 4" (3/4" x 3 1/2" finished) x 8' boards*
 Two 1" x 8" (3/4" x 7 1/4" finished) x 8' boards*

* Western red cedar
 or poplar preferred

Two 1" x 10" (3/4" x 9 1/4" finished) x 6' boards*
 24" x 24" x 3/4" piece of AC exterior plywood
 Box of 100 exterior-grade screws, 1 5/8"
 Box of 100 exterior-grade screws, 1 1/4"
 16 to 32 exterior-grade screws, 2"

20 to 30 roofing nails, 7/8"
 One quart water-based primer, exterior grade
 Two quarts flat, water-based stain or paint,
 exterior grade
 Asphalt shingles or dark galvanized metal
 One tube paintable latex caulk
 Two 1/4" x 4 1/2" carriage bolts, washers and nuts

Recommended tools

Table saw or circular saw
 Caulk gun
 Hammer
 Tape measure
 Square
 Jigsaw, keyhole saw or router
 Sandpaper or sander
 Rasp or wood file
 Variable-speed reversing drill
 1 1/2" hole saw or spade bit
 3/8" and 1/4" drill bits
 Screwdriver bit for drill

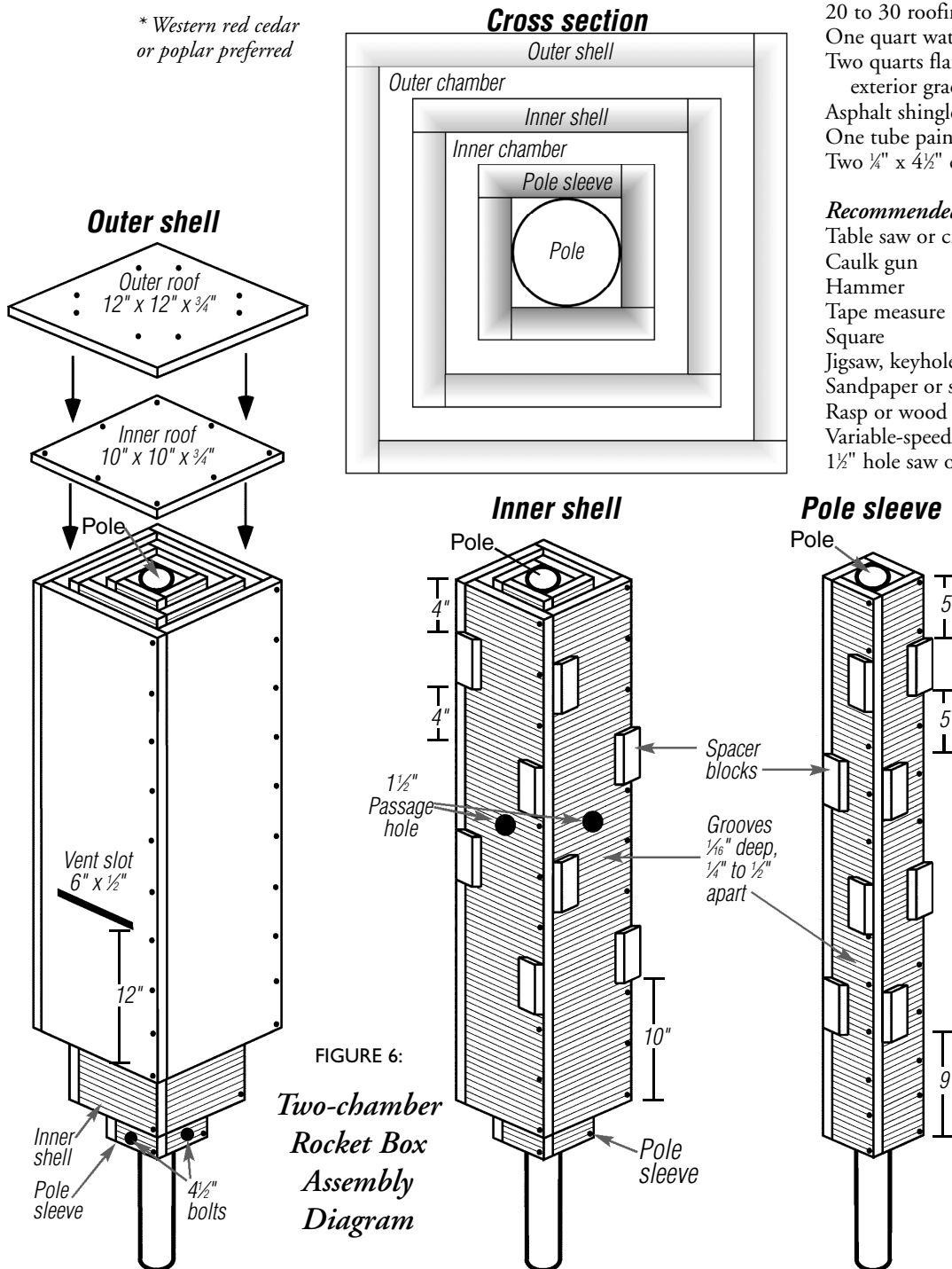


FIGURE 6:

Two-chamber
 Rocket Box
 Assembly
 Diagram

Construction

1. Measure, mark and cut out parts according to Figure 7. Dimensions must be exact for correct fit. Cut out two vent slots and four passage holes as shown.
2. Cut 1/6"-deep horizontal grooves 1/4" to 1/2" apart on one side of all 36" and 45" boards and on both sides of all 42" boards. Sand to remove splinters.
3. Drill two 3/8" holes through each 3/4" x 1 1/2" x 4" spacer block to prevent splitting.
4. Assemble four pole sleeve boards into a hollow, square box as shown using 1 1/8" screws and caulk. Pre-drill holes to prevent splitting. Countersinking holes may also help.

5. Attach spacer blocks to pole sleeve as shown (four per side) using two 1/4" screws per block. Bottom spacer blocks are 9" up from bottom of pole sleeve. Top spacer blocks are 5" from top. Alternate spacer blocks on left and right sides, 5" apart.
6. Assemble four inner shell boards into a hollow, square box as in step 4.
7. Slide pole sleeve into inner shell until top edges are flush. Bat passage holes will be towards the top. Mark location of spacer blocks. Secure inner shell to pole sleeve with 2" screws through the spacer blocks to ensure no screws protrude into roosting chambers. Pre-drill holes first to avoid splitting spacer blocks (countersinking holes may also help).
8. Attach spacer blocks (4 per side) to inner shell as shown, using two 1/4" screws per block. Bottom spacer blocks are 10" up from the bottom edge of the inner shell. Top spacers are 4" from top. Alternate spacers left and right sides, 4" apart.
9. Assemble four outer-shell boards into a hollow, square box as in step 4. Vent slots are on opposing sides and oriented towards the bottom.
10. Slide finished outer shell over inner shell, so that 6" of inner shell protrudes below outer shell. Mark locations of spacer blocks. Secure outer shell to inner shell as in step 7 (pre-drill holes first). Ensure that no screws protrude into the roosting chambers.
11. Caulking first, attach inner roof to box with 1/4" screws. Carefully drive screws into top edges of shells to prevent screws from entering roosting chambers.
12. Center and attach outer roof to inner roof with 1/4" screws, caulking first.
13. Paint or stain exterior three times (use primer for first coat). Cover roof with shingles or dark galvanized metal.
14. Slide completed rocket box over pole. One inch up from the bottom edge of pole sleeve, drill a 1/4" hole all the way through pole and sleeve. Rotate box and pole 90° and drill another 1/4" hole, 2 inches from the bottom, through pole and sleeve. Secure box to pole with two 4 1/2" bolts, washers and nuts. Orient vent slots north and south during installation.

Optional modifications to the rocket box

1. For extra mounting height, insert a 4 1/2" bolt and nut about halfway up through pole sleeve after completing step 5.
2. For extra heat-holding capacity, create a compartment in upper half of pole sleeve with a 2 1/2"-square piece of leftover plywood. Fill upper half of sleeve with sand, gravel or dirt, and seal with another piece of plywood flush with top.
3. In warmer climates, a larger outer roof with more overhang can be used for additional shading.

2' x 2' x 3/4" AC plywood

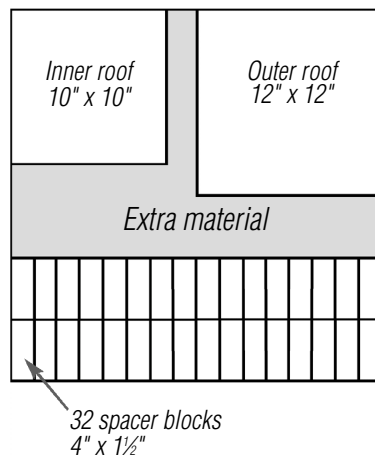


FIGURE 7
Two-chamber Rocket Box Sawing Diagram

